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Records and Descriptions of Blepharoceridæ, Erinnidæ and Rhagionidæ from South Africa (Diptera).

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With 15 Text-figures.

THIS paper comprises records and descriptions of new and little-known South African species of the families Blepharoceridæ, Erinnidæ and Rhagionidæ, and is based largely on material obtained during collecting trips in the past few years. Three new species of *Atherimorpha* in the collection of the British Museum (N.H.) are recorded because of their importance to an understanding of the taxonomy and distribution of this relic genus in South Africa, even though it has not been possible to name them because of the inadequacy of the material. Holotypes and allotypes are in the collection of the Natal Museum.

BLEPHAROCERIDÆ.

Elporia Edwards, 1915

Elporia marieps n. sp. Text-figs. 1, 5.

Diagnosis.—A large species of the *barnardi* group (Stuckenberg, 1955, p. 178), distinguished by the absence of any sort of clasping process on the fore legs in the ♂, the presence of 14-segmented antennæ, and the absence of mandibles in the ♀. Larva very like that of *edwardsi* Stuckenberg (1955, fig. 7B) from Zululand, but differing in having 3-segmented antennæ in the final instar. Pupa smooth, completely lacking granules on dorsal surface ; respiratory lamellæ subequal, diverging apically.

Male.—Wing length 5·62 mm.

Humeral calli yellowish-brown. Mesonotum with a dark, velvety, median stripe between dorso-central lines, lateral parts darkly plum-coloured ; borders of mesonotum shining, yellowish-silver pruinose. On anterior hump of mesonotum, adjacent to dorsocentral stripe, is a spot of silvery-grey pruinescence, and similar pruinescence is thinly scattered lateral to median stripe and behind suture. Anterior lateral corners of abdominal tergites 2–6 occupied by a triangular, greyish mark ; posterior margins of these tergites narrowly bordered over a median section with yellowish-orange, remainder of tergite dark orange-brown. Scutellum dark blackish-brown, obscurely tinged with orange posteriorly.

Eyes just touching over a considerable distance. Ocellar tubercle prominent, elevated. Compound eyes divided by a transverse, unfaceted band below level of insertion of antennæ into upper and lower sections, the lower section with facets only half as large as those of upper one. Antennæ 14-segmented ; apical 6 flagellar segments as long as broad, subequal, nos. 7–11 increase gradually in thickness, about as long as broad, basal flagellar segment equal to next two together. Labrum exceedingly slender, tapering steadily to a long, narrow, pointed apex, altogether a trifle longer than antenna. Labium long, slender, a little shorter than labrum. Maxillary palps elongate, 5-segmented, about as long as, or a little shorter than, labium ; length of palpal segments 2–5 proportionately 5 : 2 : $2\frac{1}{2}$: 4 ; sense-organ near apex of 3rd segment small, inconspicuous. Rostrum very slightly longer than vertical diameter of head. Wing with *Cu* quite abruptly flexed ; *An* almost straight. Fore femur normal, without swellings or projections near apex ; along inner surface is a single row of fairly strong, erect setæ which start at about basal sixth ; towards apex of femur the linear arrangement becomes indistinct and there is a scattering of short setæ that are stiffer than normal ; on under surface of femur there are also short, fairly thick setæ which commence just before halfway and become more numerous and slightly longer apically, abruptly terminating in a group a short distance before apex. Fore tibia lacking any sort of basal protuberance and differentiated setae or spines ; the setæ generally distributed over the surface are, however, stronger and more erect than is normal. Claw smoothly curved, without teeth below, only a series of fine hairs present. Genitalia differing considerably in detail from those of *hystrix* (Edw.). Parameres strongly formed and long, penis filaments stout, membranous median projection of synsternite long.

Female.—Wing length 5·87 mm.

Mesonotum with a distinct, dark, median stripe extending to dorsocentral lines, posteriorly not attaining the scutellum, but terminating in a concave end shortly behind ends of sutures. Sutures outlined with black. Lateral to median stripe the mesonotum is purplish-brown, darker before sutures, scutellum of same colour. On each side of mesonotal hump is a spot of subshining, silvery-grey pruinescence. There is a prescutellar area of more yellowish pruinescence surrounding end of median stripe and bordering it narrowly up to anterior spot of pruinescence. Abdominal tergites with large, lateral triangles of purplish-grey, remainder purplish-brown. Lateral triangles joined over midline by narrow marginal stripes of same colour.

Eyes separated by frons which is almost parallel-sided and $\frac{1}{3}$ of width of head. Upper division of eye reduced to a narrow, crescentric, dorsal strip, with small to minute facets. Ocellar tubercle moderately elevated. Antenna as in ♂ except that most of flagellar segments are subequal. Mouthparts about equal to vertical diameter of head. Labrum broader than in ♂, tapering to a sharp point, a little longer than labium. Mandibles absent. Fore femur (text-fig. 1) distinctly thickened over much of its length, ratio of length to greatest width 25 : $3\frac{1}{2}$.

Larva.—The fourth stage larva is very like that of *edwardsi* Stuckenberg (1955, fig. 7B) differing in having 3-segmented antennæ, a greater number of posterior marginal spines, and median plates of cephalic division sometimes fused. Median plates nearly always very dark brown with an enclosed area of yellowish-brown forming a pale spot which may be very small and centred around base of spine, or else large and occupying much of central area of plate. Posterior margin of terminal division smoothly rounded.

Pupa.—More or less uniform, shining brown, becoming blackish-brown when imago is fully formed. Surface smooth, devoid of granules. Respiratory lamellæ erect, large, quite widely spaced, diverging apically. Anterior and second lamellæ (text-fig. 5) shaped very much as in *edwardsi* ; anterior one elongate-triangular, the second equally high but irregularly truncated and with a pronounced basal constriction on inner side.

Holotype ♂, allotype, 7 paratopotype ♂♂. Klaserie River headwaters, Mariepskop, Pilgrims Rest district, Eastern Transvaal, 4–6 October, 1956 (B. R. Stuckenberg leg.). Also numerous larvæ and pupæ. Specimens donated to British Museum (N.H.) and *Musée Royal du Congo* (Tervuren).

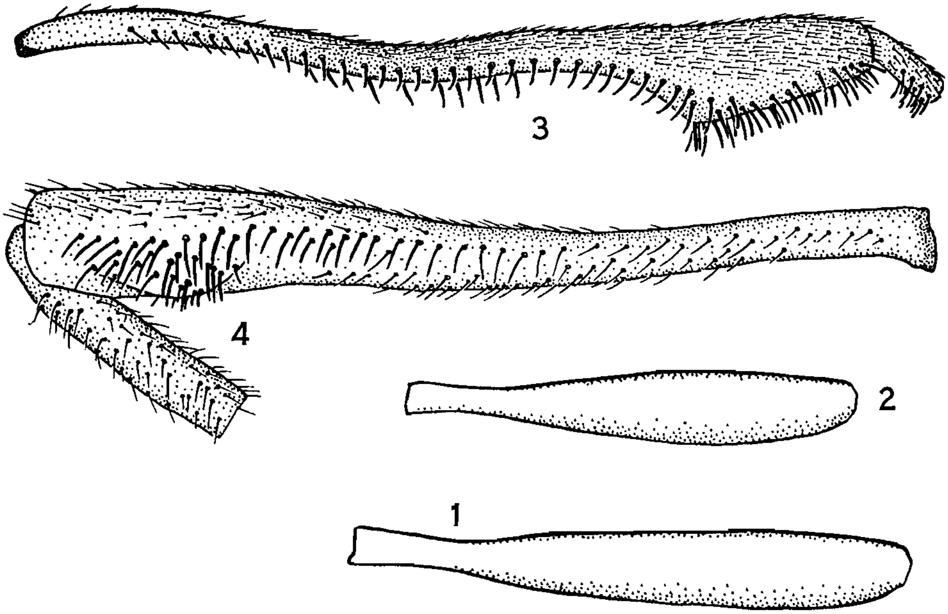
The locality from which the material was obtained is on the Drakensberg escarpment in the Eastern Transvaal not far south of Magœbaskloof, the the type locality of other species of *Elporia.* Larvæ and pupæ were found on boulders in the stream bed and on steep rock-faces of waterfalls, and adults were captured in flight over foaming cascades during sunny weather. Mature pupæ were very common, and it seems that one generation of this species passes through its larval instars during the winter. Occurring in the same stream were larvæ and pupæ of *E. hystrix* (Edwards).

Elporia hystrix (Edwards), 1933. Text-figs. 2, 3, 6.

Curupira hystrix Edwards, 1933 ; Stylops **2** : pt. 10, 232 235, figs.
Elporia hystrix Barnard, 1947 ; J. ent. Soc. S. Afr., **10** : 6–7.
Elporia hystrix Stuckenberg, 1955 ; Ann. Natal Mus. **13** (2) : 175–176.

The ♂ of this species can easily be distinguished from *marieps* by the armed fore femur (text-fig. 3). The ♀ has the fore femur (text-fig. 2) comparatively shorter and stouter, the ratio of length to width being 20 : 3½. The frons widens very strongly away from the antennæ so that the orbits adjacent to the upper division diverge widely and are far from parallel. In coloration the ♀ of *hystrix* differs principally in having no dark, median mesonotal stripe, and in having a conspicuous streak of silvery pruinescence at the anterior end of the mesonotum on each side of the hump. The pupa is distinctly granular on the upper surface, and the respiratory lamellæ (text-fig. 6) are close together and converge apically.

The type locality of this species is Magœbaskloof. Several imagos and numerous larvæ and pupæ were obtained with the material of *marieps* recorded above.



Text-figs. 1–4.
Fore tibia of (1) ♀ *Elporia marieps* n. sp. ; (2) ♀ *Elporia hystrix* (Edw.) ; (3) ♂ *Elporia hystrix* (Edw.) ; (4) ♂ *Elporia nigra* n. sp.

Key to Species of *Elporia* in the Eastern Transvaal.

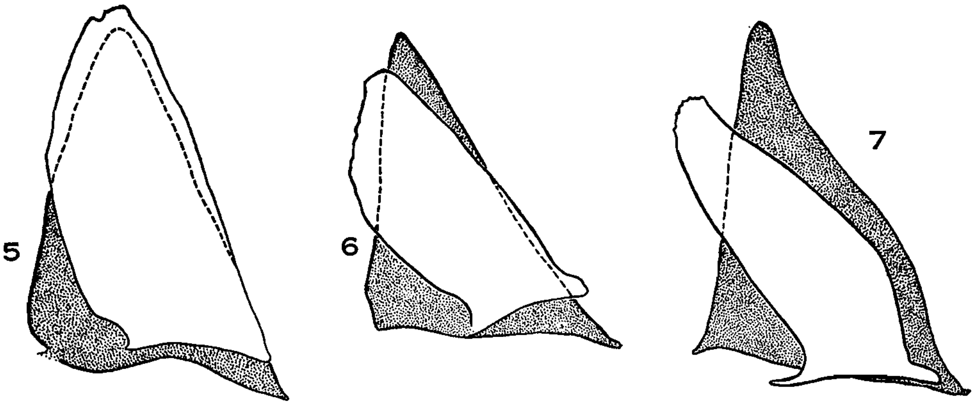
Imago.

1. Eyes similar in both sexes, widely separated, upper division small with reduced facets. Maxillary palps 4-segmented. Fore femur of ♂ without a row of strong setæ along inner face . . . . *flavopicta* (Edwards)
— Eyes of ♂ contiguous or very nearly so, separated in ♀. Upper division of eye large in ♂, reduced in ♀. Maxillary palps 5-segmented. Fore leg of ♂ with a row of strong setæ on inner surface 2
2. Males 3
— Females 5
3. Fore femur with a large brush of hairs at midlength, and a swelling bearing short spines near base of tibia . . . . *armata* Stuckenberg
— Fore femur without a large brush of hairs, no swelling present on tibia 4
4. Antenna 14-segmented. Fore femur with a row of strong setæ on inner face but without a swelling at apex on underside . . . . *marieps* sp. n.
— Antenna 13-segmented. Fore femur with a pronounced swelling at apex, and with a double series of spine-like bristles and numerous others concentrated on surface of swelling . . . . *hystrix* (Edwards)
5. Antenna 14-segmented 6
— Antenna 13-segmented ; fore tibia comparatively short and thick (text-fig. 2) *hystrix* (Edwards)

6. Eyes very large, close together, frons about as wide as 3 upper facets; a narrow band of reduced facets separating upper and lower divisions; upper division smaller than lower, with large facets. Mandibles present . . . *armata* Stuckenberg
— Eyes not very large, frons approximately one-third of width of head; eye divided by an unfaceted strip; upper division very reduced with minute facets. Mandibles absent . . . . *marieps* sp. n.

Larva (4th instar—5-gill stage)

1. Sclerotized plates on dorsum with pale enclosed markings of yellow or yellowish-brown 2
— Sclerotized plates on dorsum unicolorous 3
2. Antenna 2-segmented . . . . *flavopicta* (Edwards)
— Antenna 3-segmented . . . . *marieps* sp. n.
3. Exceedingly large, prominent spines arising from plates on dorsum . *hystrix* (Edwards)
— Sclerotized plates with very short, inconspicuous spines . . . *armata* Stuckenberg



TEXT-FIGS. 5–7.

Anterior and second right pupal respiratory lamellæ, seen from behind, of (5) *Elporia marieps* n. sp.; (6) *Elporia hystrix* (Edw.); (7) *Elporia natalensis* Stuckenberg.

Elporia natalensis Stuckenberg, 1955.

Elporia natalensis Stuckenberg, 1955; Ann. Natal Mus., **13** (2), 191–194, fig. 5.

A population of the typical form of this species has been discovered in a stream running off the southern slopes of the Langa Mountain (summit 4,617 ft.) in the Richmond district south-south-west of Pietermaritzburg, Natal. This locality is on the farm " Enon " near Byrne Settlement. Numerous ♂♂ imagos, larvæ and two pupæ were obtained on 23.i.1957. They agree with material from the Drakensberg except that the pupal respiratory lamellæ are differently shaped (text-fig. 7), the anterior one being more acute at the apex and having the inner edge straight, the second lamella narrow and irregularly truncated.

The Langa Mountain is more than 50 miles from the Drakensberg, near the end of an elevated spur which is bordered to the south by the Umkomaas River Valley and on the north by the Umgeni System and other smaller rivers, This discovery suggests that Blepharoceridæ may be much more widely distributed in Natal than has formerly been supposed.

Elporia nigra n. sp. Text-fig. 4.

Diagnosis.—A distinctive species on account of the blackish abdomen (at least in ♂). Antennæ 13-segmented. Fore femur (text-fig. 4) with a distinct but not abrupt swelling on lower surface at apex, the swelling and inner and lower faces of femur with strong, stiff setæ. Fore tibia without swelling or protuberance at base. A member of the *barnardi* group, related to *scuposa* Stuckenberg (1955) which has the fore femur differently formed (*op. cit.*, fig. 8A) and is orange on part of the abdomen. Larva as described below.

Male.—Eyes large, very narrowly separated, frons at narrowest less than diameter of an upper facet. Eyes divided just below level of insertion of antennæ by an unfaceted band, lower division facets only half as large as those of upper division. Antennæ 13-segmented, scape swollen, pedicel large and subpyriform ; first two flagellar segments subequal and larger than others, next two subequal but shorter, though a little larger than remaining segments which are subequal and about as long as broad ; antenna length a trifle less than transverse diameter of head. Rostrum very slightly longer than vertical diameter of head. Proportionate length of palpal segments 2–5 as follows : $5\frac{1}{2} : 2\frac{1}{2} : 2 : 4\frac{1}{2}$. Labrum a narrow, slender blade drawn out into an attenuated point ; lacinia attaining apex of 2nd palpal segment. Labium rather slender and elongate. Fore femur (text-fig. 4) very gently curved, thickened towards apex and with a definite but not abrupt swelling on lower surface at distal end. On inside face of femur is a row of erect, strong, stiff setæ, these becoming weaker and flexible towards femur base, and on underside there are slightly shorter, erect stiff setæ. Row of setæ on inside face merging with a cluster of similar setæ on undersurface of swelling. There is a cluster of setæ also on inside face of femur at extreme apex. Fore tibia normal, without swelling or protuberance at base ; spines also absent, but setulæ scattered over surface are noticeably stronger and more erect than is normal, especially those on inner face. Length of tarsomeres of fore leg in proportion $18 : 6 : 4\frac{1}{2} : 3\frac{1}{2} : 4$. Claws tapering and gently curved, below with 5–6 small teeth bearing fine hairs. Fore leg almost unicolorous except for brown tips of tarsomeres, and apical tarsomere which is brownish except at base. Wing with *M*4 a little flexed below *r–m* and again shortly before apex. *Cu* strongly curved, its apex very weak. *An* straight, its apical portion missing. Genitalia with parameres very long, extending well past median projection of synsternite. Penis-filaments converge strongly after leaving vesica, becoming very slender apically. Abdomen blackish with usual greyish lateral triangles in anterior corners of tergites ; no orange colour present.

Female.—Unknown.

Larva.—Superficially similar to that of *scruposa* and *natalensis.* Antennæ 3-segmented in final instar, black, 1st segment twice as long as 2nd, both fairly thick, apical segment nearly as long as 1st but more slender. Cephalic division without a transverse row of short spines. Lateral spines and plates on all divisions very small, on median plates the spines absent, only slight conical protuberances present. Median plates elongated transversely, 2½–3 times as long as broad ; median plates of cephalic division sometimes partly fused. On each median division there is a small, subelliptical, blackish, conical projection a short distance behind median plate. Upper surface generally sprinkled with very small, dark spines. Lateral lobes of anal segment well formed, wart-like. Body colour dark yellowish-brown ; lateral processes shining slightly reddish-brown ; dorsal plates obscure fusco-piceous.

Pupa.—Unknown.

Holotype ♂, 2 ♂ paratopotypes, larvæ. Nhluzane Mountain, Impendhle district, Natal, 3 February, 1957 (B. R. Stuckenberg leg.).

The structure of the fore leg in this species is somewhat similar to that in *E. natalensis oliffi* Stuckenberg (*op. cit.*, fig. 6), but *nigra* can easily be distinguished by the 13-segmented antennæ and colour of the abdomen. The larva of *nigra* is very like that of *natalensis* and *scruposa*, and in order to facilitate the identification of these species a summary of larval characteristics is given below.

External Features of 4th-instar Larvæ

natalensis	*scruposa*	*nigra*
1. No small tubercle behind median plates	A small tubercle present behind each median plate except on cephalic division	As in *scruposa.*
2. Lateral and posterior spines strong, arising from conical bases	Lateral and posterior spines short and small, without distinct conical bases	Lateral and posterior spines very weak without conical bases.
3. Spines on median plates strong, resembling lateral and posterior spines	Spines on median plates very small, subequal to those on lateral and posterior plates	Median plates without spines, instead with small, conical projections.
4. Cephalic division with transverse row of short, stout spinules	As in *natalensis* but spinules weaker	Row of spinules usually absent, sometimes poorly indicated.
5. Median plates darker than body, well differentiated and separated from one another	Median plates not dark, rather poorly differentiated and sometimes partly fused	Median plates darker than body, fairly well differentiated but sometimes partly fused.
6. Lobes of anal segment sessile, not well formed	Lobes of segment well formed, wart-like	As in *scruposa.*
7. Lateral processes of same colour as, or darker than body	Lateral processes paler than body	Lateral processes of same colour as body or slightly paler.

Elporia edwardsi Stuckenberg, 1955.

Elporia edwardsi Stuckenberg, 1955; Ann. Natal Mus. **13** (2): 196–199, fig. 7.

This species has been found in the Ngoye Forest, Eshowe district, Zululand, in February 1957. The coloration of the imago is very like that of *natalensis.*

Male.—Thoracic pleura extensively silvery-grey pruinose. Humeral calli dark orange-brown. Mesonotum velvety-black with a conspicuous, shining, silvery, post-humeral spot, and an extensive area of greyish pruinescence tinged with a delicate pinkish-red, this area slightly interrupted laterally by the sutures and by a narrowly wedge-shaped mark in median line which starts at anterior edge of hump. The area of pruinescence attains the scutellum and behind the suture dilates laterally and attains post-alar callus. Abdomen very much as in *natalensis*, tergites orange with large, lateral triangles of metallic silvery-grey. Tergite 5 extensively dark brown posteriorly, succeeding tergites dark brown in place of orange.

ERINNIDÆ.

Atherimorpha White, 1914.

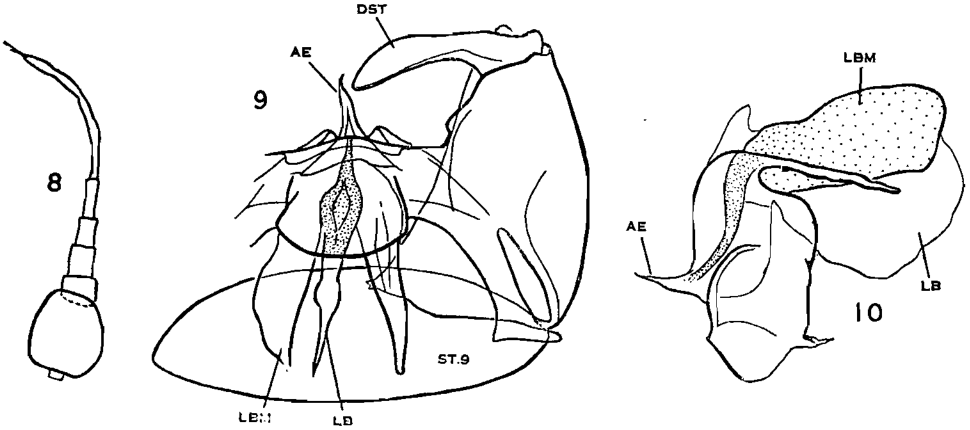
Four species of *Atherimorpha* have been recorded from South Africa (Stuckenberg, 1956). These form a distinctive group characterized by their rather slender and elongate build, greyish coloration, widely-separated eyes in both sexes, and linear arrangement of setæ on the mesonotum. The new species described below is quite different in appearance, and, together with an unnamed species from Port St. John's, represents a hitherto undescribed phylogenetic line in South Africa. A third line is represented by another undescribed species, from Eshowe, Zululand, which is very peculiar in several respects. The three species groups now known are very different from one another, and it is highly desirable that they should be compared with Australasian and Neotropical forms in order that the interrelationships of the various phylogenetic lines can be ascertained. As understood at present, the genus includes a very diverse assemblage of morphological types.

I am most indebted to Dr. H. Oldroyd of the British Museum (Nat. Hist.) for the loan of material discussed below.

Atherimorpha mensæ-montis sp. n. Text-figs. 8–10.

This species is deceptively like a rhagionid in appearance. The eyes of the ♂ are separated by a parallel-sided frons and in the ♀ the frons is similar but a little wider, a type of dimorphism known also in South African species of

Atherix Meigen (Stuckenberg, 1960). However the antennal style is terminal and segmented, there are strong, serially-arranged tibial setulæ, a linear row of hairs crosses the inferior pleurotergite, and numerous bristly hairs occur on the mesonotum, characters which indicate that the species belongs to *Atherimorpha*. The ♂ hypopygium too is completely characteristic of that genus; there are no flagellæ in the ædeagal tube, the basistyles are short, the ædeagus is a short tube arising from a sac-like structure, and the 9th tergite is strongly transverse.



TEXT-FIGS. 8–10.

Atherimorpha mensæ-montis n. sp. (8) third antennal segment and style; (9) ♂ genitalia in dorsal view; (10) axial system of ♂ hypopygium; *æ*, ædeagus, *dst*, diststyle, *lb*, median muscle strut, *lbm*, lateral muscle strut, *st*.9, ninth sternite.

Diagnosis.—A reddish-brown species of robust habitus, with broadly rounded wings, stigma rather pale, and vestiture composed almost entirely of stiff, black hairs. Eyes separated in both sexes. Antennal style 5-segmented.

Male.—Length 5·0–6·8 mm. Wing 5·75–8·0 × 2·15–2·62 mm.

Antennal style (text-fig. 8) with four distinct basal segments and a long, slender, arista-like, apical stylomere. Scape short-cylindrical, pedicel subequal in length but stouter, both with short, stiff, black hairs; 3rd segment a little shorter than basal two together, suboval, covered with very short, fine pubescence that is dark, shining brown in certain positions; style a little longer than basal three antennal segments. Frons narrow, a trifle less than $\frac{1}{8}$ greatest transverse width of head, parallel-sided, covered with dense tomentum that is dark, velvety-brown in some positions, light brownish-silver in others. Eyes black, bare, broadly rounded in lateral and dorsal view. Ocellar tubercle slightly elevated, fusco-piceous, with scattered black hairs; ocelli arranged in isosceles triangle, anterior ocellus slightly larger. Vertex with dark, wedge-shaped mark immediately behind and confluent with ocellar tubercle, and on each side with an obscure elongate-triangular mark extending along orbit. Occiput silvery-grey, with a pair of large, irregular, dark marks which are joined over cervix ; hairs of occiput black, stiff, erect, more or less triseriate near vertex, biseriate on lateral parts. Face small, partly concealed, subtriangular, convex, with dense sericeous tomentum. Rostrum and palpi brownish to yellowish-brown, with short, dark hairs, palpi sometimes with a few long, pale hairs. Lower surface of head with shining, yellowish-white hairs.

Thoracic coloration somewhat variable. Mesonotum reddish-brown, merging to yellowish-brown laterally, varying from being almost unmarked to having thin, dark, dorsocentral and median stripes, sometimes these stripes broader and almost fused in which case there is also a presutural, subquadrilateral, dark mark ; in some specimens the dorsocentral stripes have merged with median stripe to form a broad, dark brown stripe, and there are in addition broad lateral stripes composed of presutural marks and much wider, less well-defined longitudinal, postsutural marks. In a few specimens the mesonotum is dark reddish-brown obscurely and irregularly darkened. Humeri yellowish, not varying in colour though appearing lighter in specimens with dark mesonotum. All hairs of mesonotum and scutellum strong, black, mostly erect. Mesopleuron always contrasting blackish-brown ; in their most unmarked condition the remaining pleurites are dark yellowish-brown, lower part of sternopleuron blackish, hypopleuron with blackish marks below base of wing and along upper edge ; in other specimens pleura are more extensively dark, and in those with very dark mesonotum the pleura may be almost entirely blackish except for a paler, obscure mark down middle of hypopleuron and on disc of inferior pleurotergite. Propleuron with short, black hairs, inferior pleurotergite with a very distinct row of long, erect, black hairs, remaining pleura without hairs. Halteres almost unicolorous, dull yellowish-brown. Coxæ yellowish-brown, anterior and middle pairs with greyish dust, somewhat darkened in specimens with dark pleura. All legs yellowish-brown, becoming blackish on apical tarsomeres. Tibial spurs yellowish with blackened tips. Tibial setulæ seriate, quite strong but not longer than tibial diameter. Front and middle coxæ with numerous, strong, black hairs, some similar but finer hairs on outer face of hind coxa. Wings broadly rounded, membrane with quite strong greyish suffusion, a slight yellowish tinge at extreme base and along whole length of costal and subcostal cells. Stigma pale yellowish-brown, not filling apex of marginal cell. *Sc* and humeral cross-vein yellowish, *R*1 yellowish-brown, remaining veins brown. Venation normal. *R*1 with setulæ on dorsal surface for entire length and extending basad to junction with arculus. Anal cell very narrowly open to just closed.

Abdomen with 1st tergite and all sternites yellowish-brown ; in dark specimens the tergite with an extensive dark brown, median mark. Succeeding tergites brownish, sometimes tinged with yellow, sometimes irregularly blotched with dark brown. All tergites with numerous, strong, recumbent, black hairs, sternites 2–5 with mostly black hairs but also some pale yellowish-white ones, apical sternites black-haired. Genitalia (text-figs. 9, 10): basistyles short, broad, narrowly attached to one another, concealed basally by 9th sternite which is closely applied and strongly transverse ; dististyles simple, finger-like, with a slight constriction at basal third ; ædeagus a very short, pointed projection directed posteriorly from a sac-like structure supported between basistyles ; entering dorsal, inner end of this sac are 3 transparent apodemes, the outer two irregularly rectangular in shape, middle one broad, irregularly oval and connected with ædeagus via a short slender, downcurved duct.

Female.—Length 7·75 mm. Wing 6·75 × 2·31 mm.

Very similar to ♂. Frons broader, slightly divergent towards ocelli, at its narrowest 0·22 of greatest transverse width of head. In thoracic coloration the single ♀ available is like a pale ♂, the mesonotum being unstriped. First abdominal tergite yellowish-brown laterally and along posterior border, dark brownish along anterior margin. Tergites 2–4 broadly yellowish-brown along posterior margin, this colour extended forwards in median line in a subtriangular mark ; these tergites dark brownish elsewhere. Tergites 5–7 greyish-brown, remainder greyish-black. Tergites 1–4 subshining. Hairs on tergites and sternites short, dark, much weaker than in ♂, some pale hairs also on sternites. Vestiture otherwise exactly as in ♂.

Holotype ♂, allotype, 23 paratopotype ♂♂. Blinkwater Stream, Kirstenbosch, eastern slopes of Table Mountain, Cape Peninsula, 24–26 September, 1959 (P. J. and B. R. Stuckenberg leg.). Specimens donated to British Museum (N.H.) and *Musée Royal du Congo.*

This species was extremely common on vegetation on the heavily-shaded banks of the clear, fast-flowing Blinkwater Stream, but only one female could be found despite an extensive search.

Atherimorpha n. sp.

Two ♀♀ from the British Museum collection represent a new species closely allied to *mensæ-montis* n. sp. They differ in having weaker, paler setæ, and in various features of coloration. A full description of this species is deferred pending the acquisition of further material.

Port St. Johns, September 1923, R. E. Turner (B.M. 1923–510).

Atherimorpha n. sp.

This headless ♂ specimen in the British Museum is a typical member of the species group including *albipennis* Bezzi, *bevisi* Stuckenberg and *latipennis* Stuckenberg, and in some respects resembles the last-named species.

Ulundi, (? Natal Drakensberg), September 1896, G. A. K. Marshall (B.M. 1903–17).

Atherimorpha n. sp.

A small species with the eyes separated by a narrow, rectangular frons, 3rd antennal segment small, style whip-like and apparently unsegmented. Male genitalia very peculiar ; lower distal edge of basistyle produced into an irregular lobe extending inwards and backwards (rather like that found in some species of *Lampromyia*), these lobes arising below insertion of dististyles which are largely covered ventrally by them. Dististyles slender, finger-like. Ædeagus a strong, tapering tube directed obliquely upwards ; on its lower surface, a short distance from the apex, is a pair of pendant, short, horn-like appendages.

This species is atypical and perhaps cannot be included in *Atherimorpha*. A full description and investigation of its affinities must be delayed until further material is acquired. 1 ♂, Eshowe, Zululand, 6–31 May, 1926, R. E. Turner (B.M. 1926–232).

RHAGIONIDÆ.

VERMILEONINÆ.

Lampromyia Macquart, 1835.

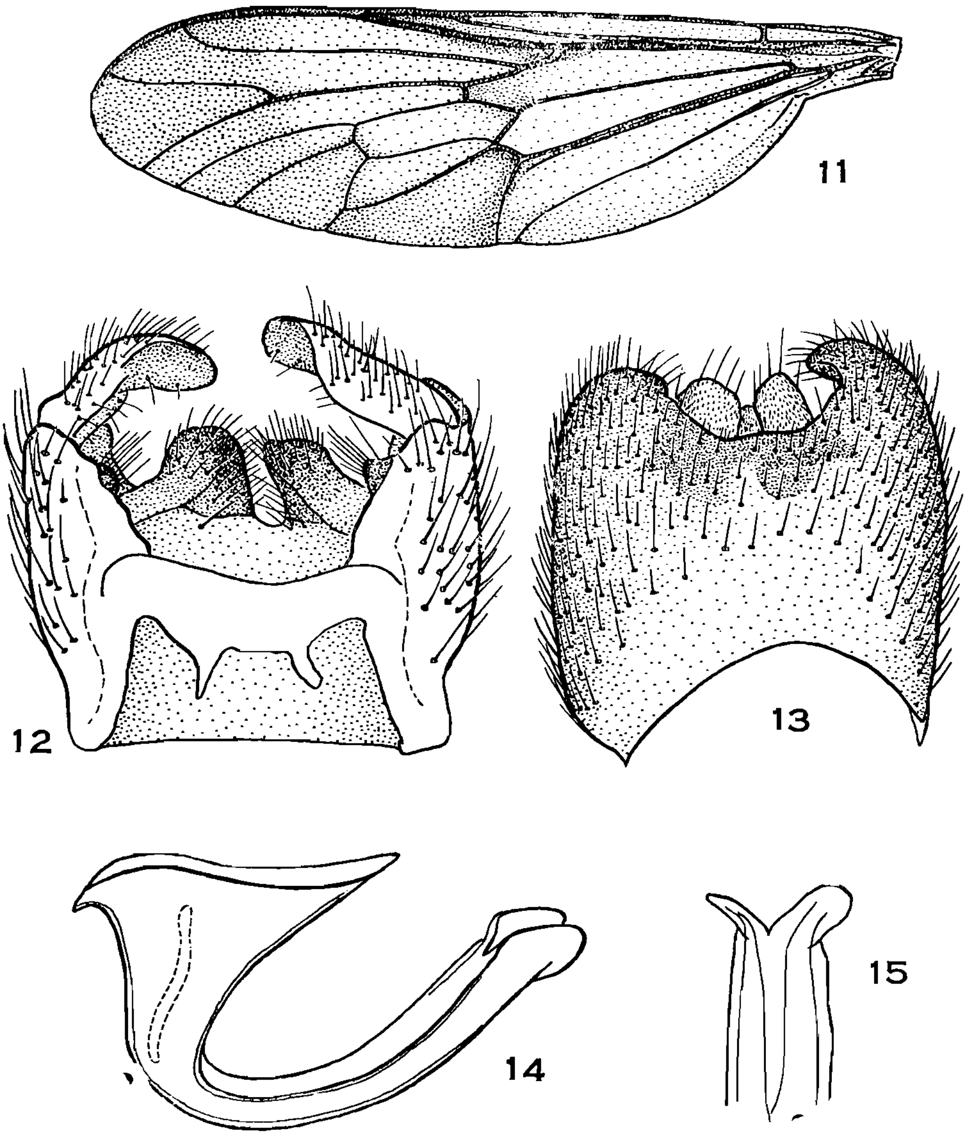
A review of the Rhagionidæ of Southern Africa was published recently (Stuckenberg, 1960), in which all the species of *Lampromyia* were revised. The following new species was collected shortly after the manuscript of that paper was completed.

Lampromyia (*Vermipardus*) *promontorii* n. sp. Text-figs. 11–15.

Diagnosis.—A large, slender, dark species with narrow wings, resembling *brincki* Stuckenberg (also of the Cape Peninsula) in coloration of mesonotum and abdomen, but distinguished by the much larger size, multicoloured hind legs and minor features of venation. The genitalia are distinctive in the shape of the dististyles and divided apex of the ædeagus. This species and *brincki* constitute a species-pair.

Male.—Length 11·6–13·3 mm. Wing 8·3–9·5 mm.

Anennæ long, slender, bicolorous ; basal segment narrow cylindrical, three times as long as broad, second segment slightly less than half as long but distinctly broader ; basal and second segment yellowish-brown, former with very fine, dark hairs below ; 3rd segment and style blackish-brown, basal part of 3rd segment obscurely yellow ; apical segment of style very slender. Face yellowish-brown with thin sericeous tomentum. Frons a little longer than broad, blackish with thin, silvery tomentum. Ocellar tubercle shining black, ocelli large and prominent, a few very small, black hairs above and behind. Occiput dull blackish-brown, thinly sericeous dusted, with very small, sparse, dark hairs. Palps yellowish-brown ; proboscis slender, blackish-brown, 1·2 times as long as vertical diameter of head,



TEXT-FIGS. 11–15.

Lampromyia (*Vermipardus*) *promontorii* n. sp. (11) ♂ wing ; (12) ♂ genitalia in dorsal view, without the ædeagus ; (13) ninth tergite ; (14) ædeagus in lateral view ; (15) ædeagus tip in end view.

Pronotum, propleura and anterior coxæ reddish-brown slightly tinged with yellow. Mesonotum with a bold, black, shining, median stripe which attains anterior margin in a rounded end, and which merges midway along its length with a black, lateral stripe which starts just behind humeral callus and is rounded anteriorly ; lateral stripes partially divided from median stripe by silvery pubescence which extends as a narrow, tapering strip ; vestiture on black stripes exceedingly short, fine and dark. Humeri, presutural parts of mesonotum adjacent to median stripe, and broad, lateral borders of mesonotum, yellowish-brown. Scutellum blackish-brown. Pleura mostly slightly reddish-brown, mesopleuron shining blackish-brown except for a narrow posterior strip, hypopleuron black except for small upper portion ; sternopleuron with obscure, dark, internal markings. Postnotum shining blackish-brown in a broad, suborbicular mark adjacent to posterior margin, slightly yellowish-brown on anterior half and sides. Haltere stem dull yellow tinged with brown, knob blackish-brown. Middle and hind coxæ dark brown with very thin, silvery tomentum which covers also sterno- and hypo-pleura. Femora of front and middle legs yellow-brown, tibia less markedly yellow, paler, with a slight greenish tinge. Tarsus of front leg almost of same colour as tibia, becoming slightly darker apically ; tarsus of middle leg pale like the tibia on most of basitarsus, apical part of basitarsus and remaining tarsomeres dark, shining brownish. Hind legs tricolorous ; femur testaceous, blackish-tinged above and a little paler at extreme base, tibia blackish except for a short basal portion which is yellow, the basitarsus pale yellow over $\frac{2}{3}$ of its length, becoming dark brown apically, last four tarsomeres dark blackish-brown.

Abdomen long, slender, shining, hypopygium large, swollen ; 1st tergite blackish, slightly tinged with reddish-brown ; 2nd tergite long and narrow, tapering posteriorly ; tergites 3–4 elongate hemi-cylindrical, forming peduncle of abdomen ; 2nd tergite blackish, narrowly yellowish-brown in apical corners ; tergites 3–6 blackish slightly tinged with reddish-brown, each transversely yellowish-brown on anterior third ; 7th tergite also blackish-brown except sides which are obscurely yellowish-brown. Sternite of hypopygium reddish-brown, tergite with dark infusion. Tergites 2–6 with very thin, sericeous tomentum on yellow anterior portions, remaining portions and hypopygium with numerous, small, dark, recumbent hairs.

Wing (text-fig. 11) narrow, membrane pale, greyish hyaline, a distinct greyish-brown suffusion across apical section and along posterior margin and in apex of 1st basal cell. Venation as figured ; 4th posterior cell closed and stalked in all specimens, stalk of variable length, anal cell open, 2nd and 3rd radial veins gently sinuous.

Male genitalia as shown in text-figs. 12–15. Ninth tergite roughly as broad as long ; dististyles peculiarly shaped, having a distinct shoulder in upper edge which consequently appears strongly flexed when seen in side view, apex bluntly rounded. Synsternite without ventral aperture, its distal edge reflexed to form a pair of blunt processes (quite unlike the tapering, pointed processes in *brincki*). Ædeagus with a large, flaring base which tapers evenly into tubular stem ; apex of ædeagus divided into two rounded, diverging lobes ; stem of ædeagus completely lacking rows of fine pointed projections that occur in other species of *Vermipardus*.

Female.—Length 13·8 mm. Wing 12·0 mm.

Very similar to ♂. Proboscis 1·6 times vertical diameter of head. Face yellowish-brown with thin yellowish-silver tomentum. Frons 1½ times as long as broad, dark grey tomentase. First abdominal tergite blackish, irregularly suffused with reddish-brown ; 2nd tergite blackish except for basal third which is occupied by a stripe of yellowish-brown which widens laterally ; 3rd and 4th tergites blackish on a little more than apical half, with broad, orange-brown, basal band ; tergites 5–6 blackish with obscure narrow basal stripes of dull yellowish-brown. Pale basal parts of tergites with very thin, sericeous tomentum as in ♂.

Holotype ♂, allotype, 5 ♂ paratopotypes, taken resting on the walls of a small cave on the slopes of Table Mountain above lower Cable House, Cape Town, Cape Peninsula, 24 September, 1959 (P. J. and B. R. Stuckenberg leg.). Specimens donated to the British Museum (N.H.) and *Musée Royal du Congo.*

The floor of the cave in which the type material was obtained was covered with a fine, dry mixture of dust and sand in which were numerous conical pits made by *Lampromyia* larvæ most probably of this species. Two living larvæ were brought to the Natal Museum where they have been established in a box of sand. They seem to be extremely hardy and were unaffected by an absence of food during more than four weeks.

Morphologically the larva is extremely like that of *Lampromyia* (*L.*) *sericea* (Westwood) as described by Engel (1929). The prothoracic spiracles differ in detail, having 8 equal stigmatic openings in a fan-shaped group. The posterior spiracle has 5–6 stigmatic openings. On the ventral surface of both segments 10 and 11 the larva has a pair of small, closely adjacent pseudopods which bear reclinate, hollow spines similar to (though smaller than) those on the dorsal surface of segment 10. On the lateral parts of segments 10 and 11 there are groups of exceptionally long spines. The anal segment does not have a dense lateral fringe of ventrally-directed hairs like that in *sericea* ; the four lobes of this segment are well formed and distinct. The pseudopod on the underside of the fifth segment consists of a swollen basal part, which bears two narrow, fleshy lobes placed one behind the other, the anterior one being the largest. Behind the second lobe is a group of short, stiff, hollow spines. The mouthparts are almost identical to those of *sericea.*

The larvæ do not react to light or movement, but are sensitive to vibration to which they respond by retreating beneath the sand. While awaiting prey they frequently lie with the anterior third or so of the body exposed in the bottom of the pit. If a potential victim tries to escape by climbing the sides of the pit, the larva flicks sand out from beneath, causing it to tumble in again. Large insects, or ones too hard to be pierced, are flicked out of the pit, and the remains of prey are ejected in the same way. The larvæ are unspecific about food and will feed on any reasonably small, non-toxic insect. They have been fed mainly on the small, black, household ant, *Acantholepis capensis* Mayr, which they capture and consume with ease. That they can deal with larger prey has been clearly demonstrated. A polydesmid millipede approximately 3 cm. long was attacked and sucked out, and two specimens of a beetle, *Dermestes* sp., about 6 mm. long, were taken also. Flies as large as *Chrysomyia* spp. (Calliphoridæ) have been readily accepted provided they were rendered incapable of flight.

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